

2032-045 PCT/US-1

Amendment dated 05/17/2010

**AMENDMENT WITH RCE**

03100291aa

Reply to office action mailed 11/17/2009

**REMARKS**

Claims 11-12, 18, 22 and 27-30 are currently pending in the application. By this amendment, claim 30 is canceled and claims 12 and 22 are amended for the Examiner's consideration. The foregoing separate sheets marked as "Listing of Claims" show all the claims in the application, with an indication of the current status of each .

The Examiner's allowance of claims 11, 18, 27 and 29 is acknowledged with appreciation.

The Examiner has required clarification of the applicant's prior submission of examples. This clarification is provided below, following an indication of the significance of the examples with respect to the scope of the claims.

The Examiner has objected to claim 30 under 37 CFR §1.75(d) as being in improper dependent form for failing to further limit the subject matter of the previous claim, which already recites the use of two ceramic forming additives. This objection is moot because the above amendment cancels claim 30.

The Examiner maintains rejection of claims 12 and 28 under 35 U.S.C. §103(a) as being unpatentable over German Patent Specification No. DE19826780 A ("DE '780"). DE '780 describes halogen free, inorganic fire-retardant agents that have been concurrently "micronized" to achieve a uniform distribution of particles small enough not to be visible. The carbonate and silica gel components have the characteristic that their concurrent micronization leads to a free flowing powder that does not clog the micronization device. By contrast, the components of the present invention have the characteristic of intumescence (i.e. swelling when heated) to at least 500% in volume.

The examiner has emphasized that DE '780 describes usage of sodium carbonate in combination with hydrogen carbonate. The former should be a representative for the ceramic forming additives while the later should allegedly be a

volume former. The present specification identifies as an example of the ceramic forming additives, among others,  $\text{Na}_2\text{CO}_3$ , while as an example of acid formers  $\text{NaHCO}_3$  is identified. However, although DE '780 identifies that a mixture of the silicic acid material in combination with ammonium and/or alkali metal carbonate material may be used, no example is provided where both a carbonate and a hydrogen carbonate material are present in the intumescent composition. According to the intumescent aspect of the present invention, the volume of a layer formed by the fire protection agent is increased by at least 500% in volume. The DE '780 reference fails to provide a teaching that would indicate to one skilled in the art the choice of components providing this claimed characteristic of intumescence. There is no teaching cited by the Examiner which would suggest that components having the characteristic, as described in DE '780, that their concurrent micronization leads to a free flowing powder would also have the desired intumescence characteristic.

It is clear from the disclosure that the intumescence characteristic is part of the invention, and that the disclosed and claimed components are limited by this characteristic. The Examiner asserts that the intumescence characteristic has no patentable weight because it is a "future use or ultimate utility." The Examiner's argument is premised upon the assumption that the composition claimed is the same as the composition disclosed in the reference, citing *In re Pearson*, 181 USPQ 641 (CCPA 1974).

In *In re Pearson* the prior art technique for growing peanuts to avoid malformed peanuts within the shell was to apply large quantities of calcium salt, which was an expensive proposition. The claimed invention was based upon the discovery that if the particle size of the calcium applied was reduced to 20 microns or less then a tenfold reduction in calcium by weight would be sufficient. In both the prior art and the claimed invention, the preferred calcium compound was gypsum ( $\text{CaSO}_4$ ). The applicant in *In re Pearson* admitted that "calcium containing compounds have been ground to particle sizes in the range" claimed, but argued that

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these smaller particle sizes had not heretofore been used to prevent malformed peanuts ("pops and unsound kernels") within the shell.

However, the applicant in *In re Pearson* had claimed "a calcium containing compound of sufficiently small particle size which when applied ... will substantially reduce the formation of pops and unsound kernels." The applicant's problem was that the prior art use of the same compound (gypsum,  $\text{CaSO}_4$ ), having a particle size of 100 to 200 microns, also served to "reduce the formation of pops and unsound kernels." Thus, the invention was anticipated. There was no claim language expressing the reduction of particle size to less than 20 microns.

Furthermore, the court in *In re Pearson* said that the limitation "reduce the formation of pops and unsound kernels" did not differentiate the claimed composition from those known to the prior art, since the applicant had admitted that the same composition having particle sizes within the range disclosed was already known. As the court expressed it,

"It seems quite clear to us that one of the compositions admitted to be old by the appellant would not undergo a metamorphosis to a new composition by labeling its container to show that it is a composition suitable for treating peanuts to avoid the formation of pops and unsound kernels. ... The container would still contain the old composition." (*In re Pearson*, at p. 644; emphasis supplied)

It is to be emphasized that the composition claimed was admitted to be old, and what was old was admitted to be identical, such that all that was necessary for the claimed invention was to place a new label on the container of the old composition. That is not the circumstance of the present invention as compared to the teachings of DE '780.

The Examiner also cites *In re Spada*, 15 USPQ2d 1655, 1658 (Fed.Cir. 1990), which similarly depends upon components (in this case polymers) "that are apparently identical" between the claim and the reference. The reference described emulsions containing the polymers as having "improved properties of hardness, resistance to abrasion, good adhesion, and dimensional stability." The claimant in *In*

*re Spada* argued that since his compositions were claimed as a pressure sensitive adhesive containing a tacky polymer, whereas the reference described products that were hard, abrasion resistant solids, his compositions were different. The court said that “discovery of a new property or use of a previously known composition, even when that property and use are unobvious from the prior art, can not impart patentability to claims to the known composition.” *In re Spada*, at 1657.

Neither *In re Pearson* nor *In re Spada* implicate the present invention, because the claimed inventions considered by the court in both these cases depended upon compositions that were identical in both the claim and the reference, and where the novelty of the claim was directed to a novel use of an old composition. That is not the situation with the current invention. The composition disclosed in DE ‘780 is not identical to the composition claimed. The Examiner has fallen into a logical error. It is as if the composition were “a fruit and a vegetable” and the reference disclosed “an apple and a carrot” whereas the disclosed composition was “an orange and a tomato”. A container of “apples and carrots” cannot simply be re-labeled “oranges and tomatoes”, as was true in *In re Pearson* with respect to 20 micron size gypsum. As regards *In re Spada*, at p. 1658, the court said “[p]roducts of identical chemical composition cannot have mutually exclusive properties” (emphasis supplied). There is no showing on the record that the composition described in DE ‘780 is identical to the claimed composition. Indeed, as pointed out in applicant’s prior response, the silicic acid compound identified in the reference is not the same as the silicon compounds described in the present application. Absent a showing that the compositions are identical it is not logical to presume that their properties will be the same, as the Examiner has done.

Furthermore, the court in *In re Pearson* also said:

“We do not mean to imply that terms which recite the intended use or a property of a composition can never be used to distinguish a new from an old composition. However, assuming their compliance with the definiteness requirements of the second paragraph of 35 U.S.C. 112, such terms must

define, indirectly at least, some characteristic not found in the old composition.” (*In re Pearson*, at p. 644)

Thus, it is clear that an “intended use or a property of a composition” can, indeed, have patentable weight. Consequently, the claims have been amended to make it clear what the significance is of the luminescence limitation, namely, that it serves to further define and narrow the claimed composition, distinguishing from a broader category those combinations which perform in accordance with the invention. What is claimed is not at the categorical level of a “fruit and a vegetable,” but is more analogous to “oranges and tomatoes.” The luminescence limitation, coupled with the examples given in the disclosure, serves to restrict the category “ceramic-forming additives and volume formers” to those which, upon heating, increase “by at least 500% in volume.” This limitation defines the claimed composition, and the DE ‘780 reference fails to show a composition meeting the claimed composition. And, just as clearly, DE ‘780 fails as a reference because it fails to “describe the applicant’s claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it.” *In re Spada*, at 1657.

The examples provided in the previous response demonstrate the superiority of the present invention. The intumescent coating pyroplast HW represents a water-based dispersion for the interior application. The pyroplast coating contains a volume former only, without containing a ceramic forming additive. The pyroplast HW is used as a comparative example representing prior art at the time of filing.

As an example of the composition for a fire protection agent for materials according to the present invention, the formulation S11 is described. The formulation S11 is composed of two formulations, namely formulation of part A) and formulation of part B). In part A) silicium dioxide represents a first ceramic forming agent while in part B) the ammonium pentaborate represents a second ceramic forming agent and the phosphoric acid ester is the volume former.

The formulation of part A) in combination with part B) represents the composition for a fire protection agent for materials according to the present

invention. The test data are continued by describing the test layout system. In the results, the difference between the compositions according to the present invention compared to the pyroplast HW is shown. Namely, figure 1 relating to the pyroplast HW composition describes the increase of the temperature over the time of test samples demonstrating that the critical temperature of 270°C which will result in burning of the wood sample is reached approximately after 13.5 minutes at at least one sensor position. In addition, it is also demonstrated that the critical temperature of 270°C is reached at all temperature sensors after about 20 minutes at the latest.

In contrast, the compositions according to the present invention, namely S11, coated with the same dry coating thickness of 2 mm reached the critical temperature at the first measuring point only after approximately 34.5 minutes. This is shown in figure 3 of the examples. Please note that the curve ETK represents the oven temperature.

The same is true for the example shown in figure 4 where further sensors were placed with the sample showing that the critical temperature was reached after approx. 28 minutes.

Hence, the examples demonstrate the superiority of using a combination of volume builder and ceramic forming additives as claimed according to the present invention.

The Examiner maintains rejection of claim 22 and rejects new claim 30 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,817,369 to Conradie et al. ("Conradie"). Claim 30 has now been canceled. As to claim 22, as argued in applicant's prior response, Conradie discloses compositions used to impregnate wood, "impregnate" in this case meaning "to incorporate a chemical into a porous material such as wood or cloth, especially by soaking it thoroughly with a liquid." Conradie's composition is formulated especially to insure that the solution actually impregnates the wood, i.e. is absorbed by or diffuses into the wood. Thus, the composition is required to be a supersaturated solution of an inorganic solute in an

aqueous solvent made by mixing an aqueous solvent and salt solute together with an organic dopant comprising an emulsifier and an oil or wax (see abstract and Claim 1). The goal of Conradie's invention is to achieve complete penetration by the solution into the interior of the wood (see paragraph at lines 31-34 of column 7 and lines 10-13 of column 4). In contrast to this prior art requiring impregnation of the wood, a fire protection agent according to the present invention should not result in impregnation of the wood but is instead a coating of the wooden material. Instead of forming a protecting layer, as required according to the present invention, impregnation of the fire retardant layer according to the teaching of Conradie would result in destruction of the impregnated portion of the wood because of the intumescent properties resulting in an increase of the volume of at least 500%. It is not at all obvious how one skilled in the art would apply the teachings of Conradie to obtain the composition of the present invention.

As with claim 12, the Examiner again relies upon the argument that the intumescence characteristic has no patentable weight. The Examiner makes the same erroneous assumption that the compositions are identical, and relies again upon *In re Pearson* and *In re Spada*. The above argument regarding intumescence in connection with claim 12 applies with equal force to the Conradie reference. By way of emphasis, it should be noted that solubility characteristics of the Conradie composition are at variance with the characteristics of the present invention and would further indicate to one skilled in the art that the compositions are not identical.

Claim 22 has been amended to make it clear what the significance is of the luminescence limitation, namely, that it serves to further define and narrow the claimed composition. The luminescence limitation, coupled with the examples given in the disclosure, serves to restrict the category "ceramic-forming additives and volume formers" to those which, upon heating, increase "by at least 500% in volume." This limitation defines the claimed composition, and the Conradie reference fails to show a composition meeting the claimed composition. And, just as

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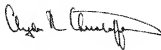
clearly, Conradie fails as a reference because it fails to "describe the applicant's claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it." *In re Spada*, at 1657.

In view of the foregoing, it is requested that the application be reconsidered, that claims 11-12, 18, 22, and 27-29 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at 703-787-9400 (fax: 703-787-7557; email: clyde@wcc-ip.com) to discuss any other changes deemed necessary in a telephonic or personal interview.

Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Respectfully submitted,



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